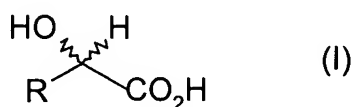


AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for the microbiological isomerization of alpha-hydroxycarboxylic acids of the formula I



where

R is straight-chain or branched C₂-C₈ alkyl or C₂-C₈ alkenyl or -(CH₂)_n-Cyc, where n is an integer of 0 to 4, and Cyc is an unsubstituted or mono- or polysubstituted, mono- or binuclear carbo- or heterocyclic ring,

~~where~~ wherein said method comprises isomerizing a substrate comprising essentially a first stereoisomeric form of an alpha-hydroxycarboxylic acid of the formula (I) ~~is isomerized with the aid of an enzyme with alpha-hydroxycarboxylic acid racemase activity and, if appropriate, isolating the resulting resultant isomer mixture or a resulting resultant second stereoisomer is isolated, or removing the a resulting resultant second stereoisomer is removed from the reaction equilibrium,~~

wherein the enzyme is a lactate racemase with an expanded substrate spectrum, which isomerizes at least one further alpha-hydroxycarboxylic acid of the formula ~~[[I]]~~ (I).

2. (Currently amended) A method as claimed in claim 1, wherein the ~~enzymatic~~ isomerization is effected by converting the substrate with a purified enzyme, an enzyme-containing cell extract or in the presence of intact cells which express at least one enzyme with alpha-hydroxycarboxylic acid racemase activity.

3. (Currently amended) A method as claimed in ~~any of the preceding claims~~ claim 1, wherein the enzyme with alpha-hydroxycarboxylic acid racemase activity ~~can be~~ is isolated from microorganisms of the genus *Lactobacillus* or *Lactococcus*.
4. (Currently amended) A method as claimed in ~~any of claims 1 to 3~~ claim 1, wherein the conversion is carried out in the presence of intact cells of microorganisms of the genus *Lactobacillus* or *Lactococcus* or intact cells of a recombinant microorganism which express alpha-hydroxycarboxylic acid racemase activity.
5. (Currently amended) A method as claimed in claim 4, wherein the microorganism is selected from ~~among the group consisting of~~ *L. paracasei*, *L. delbrueckii*, *L. sakei* and *L. oris*.
6. (Currently amended) A method as claimed in claim 5, wherein the microorganism is selected from ~~among the group consisting of~~ the strains *L. paracasei* DSM 20207 (DSM 15755), *L. paracasei* and DSM 2649 (DSM 15751), *L. delbrueckii* DSM20074 (DSM 15754), *L. sakei* DSM 20017 (DSM 15753) and *L. oris* DSM 4864 (DSM 15752).
7. (Currently amended) A method as claimed in ~~any of the preceding claims~~ claim 1, wherein the enzyme isomerizes at least one compound selected from ~~among the group consisting of~~ phenyl lactate, 4-fluorophenyl lactate, 2-hydroxy-4-phenylbutyric acid, 2-hydroxy-4-methylpentanecarboxylic acid, 2-hydroxy-3-methylbutyric acid.
8. (Currently amended) A ~~screening~~ method for screening microorganisms which express an enzyme with alpha-hydroxycarboxylic acid racemase activity, wherein the method comprises growing a lactate-producing or lactate-metabolizing microorganism, in which the having racemase activity is expected, is grown in the presence of a substrate comprising essentially a stereoisomeric form of an alpha-hydroxycarboxylic acid of the ~~above~~ formula [[I]] (I), and examining the reaction medium is examined for racemization of the substrate.
9. (Currently amended) ~~A screening~~ The method as claimed in claim 8, wherein the microorganisms are of the genus *Lactobacillus* or *Lactococcus*, or recombinant microorganisms

which express alpha-hydroxycarboxylic acid racemase activity as defined in claim 4 or 5 are screened.

10. (Currently amended) ~~A screening~~ The method as claimed in claim 8 or 9, wherein the
microorganisms obtained from the screening which racemize the essentially the stereoisomeric
substrate to 1 to 100% are screened for.

11. (Currently amended) An alpha-hydroxycarboxylic acid racemase ~~obtainable by~~ obtained
by growing a microorganism which has tested positively for selected according to claim 8 which
has a positive racemase activity in a screening method as claimed in any of claims 8 to 10 and
isolating the alpha-hydroxycarboxylic acid racemase from the culture.

12. (Currently amended) ~~An~~ The alpha-hydroxycarboxylic acid racemase as claimed in
claim 11, which wherein the racemase activity racemizes at least one alpha-hydroxycarboxylic
acid of the above formula I to (I) between 1 to 100%, preferably 20 to 100%, in particular more
preferably 50 to 100%.

13. (Currently amended) A nucleic acid ~~sequence~~ encoding at least one alpha-
hydroxycarboxylic acid racemase as claimed in claim 11 ~~or 12~~.

14. (Currently amended) An expression vector comprising a ~~coding~~ the nucleic acid
~~sequence~~ as claimed in claim 13 ~~in operable linkage~~ operably linked with at least one regulatory
~~nucleic acid~~ nucleotide sequence.

15. (Currently amended) A recombinant prokaryotic or eukaryotic microorganism
comprising at least one nucleic acid ~~sequence~~ as claimed in claim 13 ~~or at least one expression~~
~~vector as claimed in claim 14.~~

16. (Currently amended) A method for producing a protein with alpha-hydroxycarboxylic
acid racemase activity, wherein ~~[[a]]~~ the method comprises growing the recombinant prokaryotic
or eukaryotic microorganism as claimed in claim 15 is grown and isolating the protein is
isolated from the culture.

17. (Currently amended) A method for isolating a protein with alpha-hydroxycarboxylic acid racemase activity, wherein the method comprises disrupting a microorganism which has tested positively for having a positive racemase activity is disrupted, removing cell wall fragments are removed and isolating the protein with the desired enzyme activity is isolated.

18. (Currently amended) A The method as claimed in ~~any of claims 1 to 7~~ claim 1, wherein the ~~desired~~ resultant second stereoisomer is essentially removed from the isomer mixture ~~formed~~ and the ~~remainder~~ remaining part of the isomer mixture is subjected to a further isomerization step.

19. (Currently amended) A The method as claimed in ~~any of claims 1 to 7~~ claim 1, wherein the resultant isomer mixture ~~formed~~ is subjected to a chemical or enzymatic stereoselective subsequent reaction and the reaction mixture obtained is subjected to a further isomerization step.

20. (Currently amended) A The method as claimed in ~~any of claims 1 to 7~~ claim 1, wherein the isomerization reaction is coupled with a chemical or enzymatic, enantioselective subsequent reaction, during which ~~reaction the resulting desired~~ resultant stereoisomer of the alpha-hydroxycarboxylic acid is removed from the isomerization reaction equilibrium.

21. (Currently amended) A The method as claimed in claim 19 ~~or 20~~, wherein the chemical or enzymatic, enantioselective subsequent reaction is ~~selected from among an esterification and or an amidation of the alpha-hydroxycarboxylic acid.~~

22. (New) The method as claimed in claim 20, wherein the chemical or enzymatic, enantioselective subsequent reaction is an esterification or an amidation of the alpha-hydroxycarboxylic acid.

23. (New) The method as claimed in claim 8, wherein the microorganisms are selected from the group consisting of *L. paracasei*, *L. delbrueckii*, *L. sakei* and *L. oris*.

24. (New) The alpha-hydroxycarboxylic acid racemase as claimed in claim 11, wherein the racemase activity racemizes at least one alpha-hydroxycarboxylic acid of the formula (I) between 20 to 100%.

25. (New) The alpha-hydroxycarboxylic acid racemase as claimed in claim 11, wherein the racemase activity racemizes at least one alpha-hydroxycarboxylic acid of the formula (I) between 50 to 100%.